

AMENDMENTS TO THE CLAIMS:

Claims 1-2, 4-6, 8-14, 16-17, and 27-29 have been allowed.

Claims 1-2, 4, 8-12, 16-17, and 27-29 are hereby requested to be amended.

Claims 1-2, 4-6, 8-14, 16-17, and 27-29 remain pending.

1. (Presently Amended). A system for lapping a surface, the system comprising:
 - a robotic arm; and
 - a pneumatic end effector unit, wherein the pneumatic end effector unit comprises:
 - a first base attached to the robotic arm;
 - a second base;
 - a lapping medium pad attachable to the second base;
 - a bumper coupled to the lapping medium pad; and
 - a pneumatic piston system coupled between the first and second bases.
2. (Presently Amended). The system of Claim 1, wherein the lapping medium pad comprises an abrasive member adapted to engage the surface.
3. (Canceled).
4. (Presently Amended). The system of Claim 1, further comprising:
 - an abrasive pad; and
 - a pitch for attaching the abrasive pad to the lapping medium pad.

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5. (Previously Presented). The system of Claim 1, wherein the pneumatic piston system comprises:

- a piston chamber;
- a piston being slideably received within the piston chamber; and
- a component for controlling air pressure within the piston chamber.

6. (Original). The system of Claim 5, wherein the piston chamber is configured to guide the second base.

7. (Canceled).

8. (Presently Amended). The system of Claim 1, wherein the second base comprises a latch for attaching the lapping medium pad to the second base.

9. (Presently Amended). The system of Claim 1, further comprising a slurry system coupled to one of the second base or the lapping medium pad for introducing a slurry compound.

10. (Presently Amended). A lapping end effector, comprising:

- a first base attachable to a robotic arm;
- a second base;
- a flexible coupling member ~~lapping pad~~ attachable to the second base;
- a bumper coupled to the flexible coupling member ~~lapping pad~~; and
- a pneumatic piston system coupled between the first and second bases.

11. (Presently Amended). The end effector of Claim 10, further comprising:

- a flexible coupling member coupled between the lapping medium ~~first base~~ and the second base.

12. (Presently Amended). The end effector of Claim 10, further comprising:

- an abrasive pad; and
- a pitch for attaching the abrasive pad to the lapping medium pad.

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13. (Original). The end effector of Claim 10, wherein the pneumatic piston system comprises:

- a piston chamber;
- a piston being slideably received within the piston chamber; and
- a component for controlling air pressure within the piston chamber.

14. (Original). The end effector of Claim 13, wherein the piston chamber is configured to guide the second base.

15. (Canceled).

16. (Presently Amended). The end effector of Claim 10, wherein the second base comprises a latch for attaching the lapping medium pad to the second base.

17. (Presently Amended). The end effector of Claim 10, further comprising a slurry system coupled to one of the second base or the lapping medium pad for introducing a slurry compound.

18. (Previously Withdrawn). A method for lapping a surface, the method comprising:
moveably applying an abrasive member to the surface; and
pneumatically controlling a pressure applied by the abrasive member to the surface.

19. (Previously Withdrawn). The method of Claim 18, wherein moveably applying an abrasive member to the surface includes flexing a flexible coupling member such that the abrasive member at least partially conforms to the surface.

20. (Previously Withdrawn). The method of Claim 18, wherein moveably applying an abrasive member to the surface includes flexing a semi-rigid coupling member such that the abrasive member at least partially conforms to the surface.

21. (Previously Withdrawn). The method of Claim 18, wherein moveably applying an abrasive member to the surface includes flexing a flexible, substantially cylindrical coupling member disposed between a support member and the abrasive member.

22. (Previously Withdrawn). The method of Claim 18, wherein moveably applying an abrasive member to the surface includes rotatably applying an abrasive member to the surface using a robotic arm.

23. (Previously Withdrawn). The method of Claim 18, wherein pneumatically controlling a pressure applied by the abrasive member to the surface includes controlling a pressure within a cylinder operatively coupled between a support member and the abrasive member.

24. (Previously Withdrawn). The method of Claim 18, wherein pneumatically controlling a pressure applied by the abrasive member to the surface includes controlling a pressure using an air logic controller.

25. (Previously Withdrawn). The method of Claim 18, wherein pneumatically controlling a pressure applied by the abrasive member to the surface includes maintaining a constant pressure applied by the abrasive member.

26. (Previously Withdrawn). The method of Claim 18, further comprising applying an abrasive slurry to the surface at least proximate the abrasive member.

27. (Presently Amended). A lapping end effector for performing an operation on a surface of a workpiece, comprising:

- a first base attachable to a robotic arm;
- a second base attached to the first base;
- a lapping medium pad attached to the second base; and
- a flexible coupling system coupled between the lapping medium first and the second bases, the flexible coupling system configured to flex to allow the lapping medium pad to at least partially conform to the surface of the workpiece such that an axis of rotation of the lapping medium pad is non-normal to the surface during performance of the operation.

28. (Presently Amended). The end effector of Claim 27, wherein the first and second bases are coupled by flexible coupling system includes a pneumatic piston system comprising:

- a piston chamber;
- a piston being slideably received within the piston chamber; and
- a component for controlling air pressure within the piston chamber.

29. (Presently Amended). The end effector of Claim 27, wherein the second base comprises a latch for attaching the lapping medium pad to the second base.